

CLAIMS

1. An insertable component (1, 10), which is embodied as a non-return
element that is insertable into a gas or liquid line, comprising a
5 housing (2) with at least one closing body arranged in an interior of the
housing that can be displaced into a closed position to seal a through
opening or several through openings (14) of feeder channels (13),
characterized in that the housing (2) is comprised of at least two
housing parts (3, 4) having the feeder channels in at least one annular
10 area, opening into a housing chamber, and that between facing sides of
the two adjacent housing parts (3, 4) a housing seal (5) is provided,
which is connected in one piece to at least one annular membrane (11),
that can be displaced by a flow medium, the housing seal is located
inside the housing chamber (12) and forms the closing body.
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2. An insertable component according to claim 1, characterized in that
the housing seal (5) and the at least one annular membrane (11),
forming the closing body are embodied as flat bodies.
- 20 3. An insertable component (1, 100, 101, 102, 103), which is embodied as
through-flow regulator that is insertable into a gas or liquid line,
comprising a housing (2), with at least one throttle or regulating body
(15, 15') being arranged inside said housing, limiting a control gap (17,
17') between the throttle or regulating body and a housing wall (16),
25 with the control gap changing depending on pressure, in particular
according to claims 1 or 2, characterized in that the housing (2) is
comprised of at least two housing parts (3, 4) and that between the
facing sides of two housing parts (3, 4), a housing seal (5) is provided,
which is connected in one piece to the at least one throttle body or
30 regulating body (15, 15') supported inside the housing.

4. An insertable component according to one of claims 1 through 3,
characterized in that the housing components (3, 4) are provided with
annular surfaces, facing one another, between which the housing seal
(5) is clamped.

5. An insertable component according to one of claims 1 through 4,
characterized in that a preferably central housing portion of a first
housing part (3) engages a central recess (31) of a second housing part
(4.)

6. An insertable component according to one of claims 1 through 5,
characterized in that in order to connect the housing parts (3, 4) in the
mounting position, engaging snap elements are provided on the at
least two housing components (3, 4).

7. An insertable component according to claim 6, characterized in that
the snap elements of one of the housing parts (4) is provided with a
central opening (6) and the other housing part (3) is preferably
provided with several engaging hook elements (7.)

8. An insertable component according to claim 7, characterized in that
the hook elements (7) of one of the housing parts (3) engage the other
housing part (4) in a mounted position and extend beyond an exterior
side thereof.

9. An insertable component according to one of claims 4 through 8,
characterized in that surfaces clamping the housing seal (5) are
provided at an exterior rim of the housing parts (3, 4.)

10. An insertable component according to one of claims 4 through 9,
characterized in that the interior surface of the housing part (3),
arranged upstream extends inwardly beyond a clamping area of the
housing seal (5) and forms a section of the housing chamber wall and
5 that here one feeder channel or several feeder channels open.
11. An insertable component according to claim 10, characterized in that
several feeder channels (13) are provided, distributed in a
circumferential direction, which preferably open immediately adjacent
10 to the clamping region of the annular membrane (11) forming the
housing seal (5).
12. An insertable component according to one of claims 1 through 11,
characterized in that the annular membrane is extended inwardly
15 beyond an area, forming the closing body and being adjacent on an
inside to the housing seal (5) and thus forming in the open position a
separating wall dividing the housing chamber (12) into two partial
annular chambers (19, 20), and in this position contacting with a free
interior annular rim (23) the downstream housing part (4), that
20 downstream openings (21) and through openings (14) are connected to
the downstream partial annular space (19) and that at least one return
flow opening (22) opens into the downstream partial annular space
(20).
- 25 13. An insertable component according to one of claims 3 through 12,
characterized in that the throttle body (15) is mounted in a housing
chamber (12) between the upstream and the downstream housing part
(3, 4) and that the downstream housing part (4) is provided with a
downstream rest and an exterior support and the upstream housing

part (3) is provided with an interior housing wall (16) forming a limit of the control gap or a similar rest for the annular throttle body (15.)

14. An insertable component according to one of claims 1 through 13,
5 characterized in that it is embodied as a non-return element or as a through-flow controller.

15. An insertable component according to claim 14, characterized in that
10 the annular membrane (11) is embodied as a closing body located adjacent to the housing seal (5) and that it is connected in one piece at an interior end thereof to the throttle body (15).

16. An insertable component according to one of claims 1 through 15,
15 characterized in that it is embodied for being inserted into a liquid line and is provided on an outside thereof with an annular seal (8) for sealing it from the liquid line and that the annular seal (8) is connected in one piece to the housing seal (5) located between the facing sides of the housing parts (3, 4).

20 17. An insertable component according to claim 16, characterized in that the exterior annular seal (8) is embodied as an O-ring seal or an annular cord seal.

25 18. An insertable component according to one of claims 1 through 17, characterized in that between the two adjacent housing parts (3, 4) on the outside, an annular groove (9) is provided for accepting the exterior annular seal (8) and that the annular groove (9) is formed by a recess in the housing that opens toward a separation point of the housing (2) on the one housing part (3) for forming a side wall and a bottom of the

groove and by an interior surface of the other housing part (4) for forming the second side wall.

5 19. An insertable component according to one of claims 3 through 8 and 14, characterized in that the housing seal (5) is connected on both sides to at least one throttle body (15, 15'), which throttle bodies (15, 15') are each supported on the inside of said housing (2) in a control gap (17, 17').

10 20. An insertable component according to claim 19, characterized in that the annular housing walls (25, 25') clamping the housing seal (5) on faces therebetween separate the control gaps (17, 17') allocated to the throttle bodies (15, 15').

15 21. An insertable component according to claim 19 or 20, characterized in that the throttle bodies (15, 15') provided on both sides of the housing seal (5) react to different differential pressures and that, on the one hand, a first throttle body (15) reacts preferably in a low pressure range and that, on the other hand, a second throttle body (15') reacts in
20 a high pressure range.

22. An insertable component according to one of claims 3 through 21, characterized in that the insertable component is provided with at least one lip-shaped throttle body (15, 15').

25 23. An insertable component according to one of claims 3 through 22, characterized in that the insertable component is provided with at least one throttle body (15') embodied as an O-ring.

24. An insertable component according to one of claims 3 through 23, characterized in that at least one lip-shaped throttle body (15, 15') is aligned with a free lip end region (30) thereof preferably extending diagonally opposite a through-flow direction (Pf1.)
- 5 25. An insertable component according to one of claims 21 through 24, characterized in that the control motion of at least one lip-shaped throttle body (15, 15') is limited by a control stop.
- 10 26. An insertable component according to one of claims 21 through 25, characterized in that at least one lip-shaped throttle body (15, 15') comprises a lip section, aligned approximately lateral to the through-flow direction (Pf1), which extends into a free lip end region (30) aligned opposing the through-flow direction (Pf1.)
- 15 27. An insertable component according to claim 26, characterized in that the lip section (29), approximately aligned lateral to the through-flow direction (Pf1), cooperates with the control stop.
- 20 28. An insertable component according to one of claims 1 through 27, characterized in that at least one of the housing parts (3, 4) comprises at least two preferably approximately concentric annular walls (24, 25, 26; 24', 25', 26') connected via approximately radial connection bars (27).
- 25 29. An insertable component according to claim 28, characterized in that at least one connection bar (27) arranged downstream of the throttle body (27) is embodied as a control stop and/or as a throttle body support.
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30. An insertable component according to one of claims 19 through 29, characterized in that the throttle bodies (15, 15') provided at both sides of the housing seal (5) comprise different designs, each adapted to a different reaction pressure.

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31. An insertable component according to claim 30, characterized in that the housing seal (5) is connected, on one side, to a lip-shaped throttle body (15) and, on an other side, to a throttle body (15') embodied as an O-ring.

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32. An insertable component according to one of claims 19 through 30, characterized in that a lip-shaped throttle body (15, 15') is connected on each side of the housing seal (5).

15 33. An insertable component according to one of claims 21 through 32, characterized in that the throttle body (15) reacting in a low pressure range is allocated to an interior or exterior control gap (17, 17').

20 34. An insertable component according to one of claims 19 through 33, characterized in that the housing seal (5) and the throttle bodies (15, 15') connected thereto are formed as a multi-component die-cast part and that the throttle bodies (15, 15') are made from different elastomers.

25 35. An insertable component according to one of claims 3 through 34, characterized in that at least one housing wall (16), limiting a control gap (17, 17'), is provided with a regulating profiling (24; 28, 28') extending approximately in the through-flow direction (Pfl) in the form of ribs, grooves, or the like.

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